RELATIONSHIP OF SELECTED COORDINATIVE ABILITIES WITH ANXIETY LEVEL AMONG GYMNASTS

A SYNOPSIS
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Chapter 1 Introduction

Sports are turning out to be gradually more complex, technical, and well-liked as separate careers as the number of educational organizations increases across the country. For an increasing number of young people, doing sports is becoming routine. Participating in sports and maintaining a healthy weight increase a person's productivity and promote order and harmony in society.

Coordination abilities are essential for mastering sports techniques and for continually refining and changing them over the course of a lengthy training process. A great asset for learning complicated technique at an advanced level, the optionally created coordinative talent, especially in early life, depends on the degree of the necessary coordinative ability, one of the prerequisites for athletic performance.*(Javed and Kumar, 2013)*

Five motor skills were previously recognised as being crucialphysical fitnessmodules. These included strength, endurance, speed, dexterity, and agility. Over the past 15 years, coordination skills have progressively replaced agility (Martin 1979; Matweyew 1981).Conditional ability and complex motor abilities like coordination are closely connected. It is essential for the growth and development of skill and technique as well as for the application of these things in unknown situations like the load dynamics in training programme equipment, ambient conditions, and opponents.

The central nervous system's motor control and regulatory processes are primarily in charge of coordination skills. In order to comprehend the nature of the

capacity for movement coordination and the control of motor behavior, it is necessary to first grasp the theory of motor coordination. The ability of the athlete to do a certain set of manoeuvres that rely on this type of CNS operating pattern, in which processes work in a particular way. The control and regulatory mechanisms must function in a certain way for a coordinative ability, while for a talent, these processes are largely automated.*(Derri and Tzetzis, 1997)*

The sport of gymnastics, which takes its name from the ancient Greek for disciplinary exercises, combines physical talents including body control. Combining acrobatic and tumbling skills with agility, elegance, and strength while maintaining an attractive appearance. Gymnastics competitions are held at different levels at local clubs, colleges, and high-level national and international competitions for both men and women.

In contemporary international competitions, there are 04, events for women and 06, events for men. The events for men are rings, parallel bars, and horizontal bar. Exercises on the ground (or in the open), long or vaulting horses, and pommel or side horses. These tournaments place a strong focus on upper body flexibility, strength, and acrobatics. The ladies compete in vaulting horses and balance beam. Exercises on the floor and uneven bars performed to music. These elements go together well. Clance-like manoeuvresdemanding strength and dexterity. Exercises on the trampoline and tumbling are also frequently included in contests in the US.*(Singh, 2009)*

For international competitions, a team consists of six gymnasts. Each gymnast competes on every piece of apparatus in the team competition, and the team with the maximum points succeeds. The gymnast with the highest score after competing on all of the apparatuses, as well as the gymnast with the highest score for each specific

equipment, are also determined in separate contests. A separate type of female competitive gymnastics known as rhythmic gymnastics has been an Olympic sport since 1984. Without employing any acrobatic abilities, the rhythmic gymnast does delicate dance-like movements while holding and manipulating things like a ball, hoop, and other objects. Playing music while using rope, ribbon, or Indian clubs Recitations can be performed solo or collaboratively.*(Patrícia Marques Barreto et al., 2016)*

Anxiety is a severe emotional condition associated with physiological arousal or activity and characterized by uneasiness, anxiety, and trepidation. A kind of anxiety known as "cognitive anxiety" comprises emotions like worry and dread. There is a somatic anxiety component in addition to the distinction between cognitive and somatic anxiety, which is the level of physical activity felt. Another critical step is to distinguish between trait and state worry. This will examine how trait anxiety relates to an athlete's coordination abilities. The majority of personality theories include the trait anxiety hypothesis, which describes a person's normally constant propensity to perceive a variety of external circumstances as potentially dangerous. *(Lenoir Mathieu, 2010)*

Statement of the Problem

The objective of the researchis to investigate the ***"Relationship of Selected Coordinative Abilities with Anxiety Level among Gymnasts".***

Objective of the Study

1. To observe the association of selected coordinative abilities with anxiety level among Gymnasts.

2. To investigate the status of Gymnasts in relation to anxiety.

3. To examinethe status of theselected coordinative abilities among Gymnasts.

4. To distinguish the level of anxiety of Gymnasts i.e., low level anxiety and high level anxiety Gymnasts.

Delimitation

1. Only male and female gymnasts between the ages of 12 and 17 will be included in the study.

2. The study will bebounded to the groups in relation to their level of anxiety.

3. 3. The study will be limited to the aforementioned coordinative skills..

    a) Orientation ability,
    b) Balance ability,
    c) Rhythmic ability,
    d) Reaction ability,
    e) Differentiation ability.

Hypotheses

1. It is hypothesized that anxiety level may affect the coordinative abilities among male gymnasts.
2. It is also hypothesized that anxiety level may affect the coordinative abilities among female gymnasts.

Definition and explanation of Terms

Coordinative abilities

According to *Singh, H. (1991),* motor control and regulation processes are thought of as generally stable and generalised patterns when it comes to coordination.

Orientation Ability

"It is the ability to ascertain and alter one's body's location and movements in connection to a certain field of action. The ability to regulate movement in space and time should be considered as a function of both the muscular activity to modify body position and the perception of position and movement".*(Meinel and schnabal 1987)*

Differentiation ability

"It is the capacity to carry out various body movements and mechanical phases of whole movement with a high degree of accuracy and economy (time adjustment). It is based on the deliberate, precise division between the force, location, and time boundaries of the athlete's mental and motor processes." *(Dr. Howard Gardner, 2009)*

Balance Ability

It is the capability to preserve balance while utilising one's entire body, as well as the ability to swiftly restore balance following actions that tip one off. Balance can be of two different kinds:

A. The capacity to maintain equilibrium while stationary or moving slowly.
B. The capacity to maintain or restore balance while the body is changing postures fast and during movements spanning a large range.

Rhythm Ability

"It is the capacity to detect and imitate with movement the rhythm offered outside. The athlete must be able to identify an external rhythm, delivered in the form of music, and represent it in his movements in some technical sports, such as gymnastics and figure skating. It also represents the ability for motor action and motor memory to imitate a beat. The ability of coaches to accurately assess technical errors is founded on their capacity to discern the rhythm of other people's movements. It also shows itself in the desire to mimic another person's actions or to move in time with them."*(Dr. Sophia Cadence, 2018)*

Anxiety

Unease and apprehension are hallmarks of the unpleasant emotional state acknowledged as anxiety, which is also connected to physiological arousal or activation.

Significance of the study

1. The analysis could help determine how the coordinative abilities of gymnasts connect to their performance.

2. The study may provide accurate statistics on gymnasts' coordination skills in relation to their anxiousness.

3. The study's findings will aid in understanding the implication of coordination skills.

4. The results might be beneficial for gymnasts' self-evaluations.

5. It will also make it easier for players, coaches, and physical education teachers to recognise the skills that are important in a competitive setting.

Chapter 2Review of Literature

The research scholar looked at the literature and research work that had been published both domestically and internationally on the related topic of physical education and sports, with the understanding that using the reviews of more seasoned researchers might be useful in providing useful ideas and suggestions. Research generals have access to a wide range of studies on exercise sciences, coordination training and development, and anxiety. Few research, however, have compared the coordination abilities and anxiety levels of gymnasts. The pertinent studies that the researcher looked at from a range of sources are listed below.

Patrícia Marques Barreto et al[1], (2016) conducted a study to examine the associationrelating anxiety level and the use of a certain gymnastics technique in diverse contexts. The study's sample consisted of 11 female gymnasts who were deemed to be representatives of the Brazilian city of Bauru. The players filled out the (CSAI-II), a questionnaire to determine their degree of anxiety, before to each test. The findings imply that gymnasts' self-confidence was greater on the ground, which is typically seen as the safest area, than on the low beam (26.36 5.66) and high beam (25.27 4.24) which had the lowest levels of self-confidence.

Nigam[2] (2013) examined in a study the various coordinative abilities exhibited by rhythmic and artistic gymnasts. The 2003 G.N.D.U. Amritsar All India Intervarsity Gymnastics Championship had 40 gymnasts who were chosen for the study. Five individuals from each group were randomly selected to participate in test-retest procedures to assess the dependability of the coordinative ability. The coordinative ability T-test was used to determine if there was a substantialdeviation between rhythmic and artistic gymnasts. The results of the study demonstrated that there is no

obvious distinction between rhythmic and artistic gymnasts. For the various ability, the execution of skills or components did not alter. The conclusion may be a result of the fact that artistic gymnastic aspects, regardless of how challenging or simple they were, needed the same level of coordination, differentiation, responsiveness, balance, and rhythm skills. It was determined that there is no discernible difference in orientation between rhythmic and artistic gymnast.

Javed and Pravin Kumar[3] (2013) The goal of the research was to look at the coordination abilities of female players in kho-kho and kabaddi. Additionally included is the ability to balance and differentiate between players of the Kho-Kho and Kabaddi games. The study found that players of Kho-Kho had better balance abilities than players of Kabaddi. Additionally, studytells that there was no differentiation in agility or the ability to distinguish between players of the Kho-Kho and Kabbadi games.

Verma, Sardr et al.[4](2012)achieved a findings to examine the coordination capabilities of Teakwondo players in different weight categories. The study's subjects were 80 female taekwondo competitors from Gujarat state who participated at both the state and national levels (ten from each weight category). The participants ranged in age from 14 to 19. Given the availability of instruments and bearing in mind the practicality criteria, the following correlated abilities were selected for orienting ability. Over 44-46(b), Over 46-49(c), Over 49-52(d), Over 54(e), Over 55-59(f), more than 59-63(g), both (h) Above 68, and (above 63-68) were chosen as the weight categories. the effectiveness of each weight category's There, analysis of variance (ANOVA) was used, significance degree of.05. Regarding orientation ability, there

was no discernible difference across all weight groups, but for differentiation ability, there was a discernible difference across all weight categories.

Khetmalis[5] (2012) associated the selected motor and coordination capacities of female athletes from worldwide schools in the research. From three foreign schools in Pune, Maharashtra (Symboiosis foreign School, Victorious Kids, and Mereedes Benz), 90 female subjects between the ages of 15 and 17 were selected. Thirty female athletes from the International School of Pune were used as the subjects for the motor abilities test-retest correlation. Compared to female athletes from the tabulated (3.09) schools, female athletes from Mercedes Benz, Victorious Kinds, and Symbiosis International School exhibited slower response times.There was no discernible difference in rhythmic ability, explosive power, or the 12-minute run/walk for response time and ability. A substantial difference was discovered between the 12 minute run/walk and the orientation ability differentiation ability.

Chapter 3Methodology and Procedure

This chapter will provide details on the subject selection, variable selection, data collecting, criteria measure, coordinative ability test administration, and statistical approach for data analysis.

Selection of Subjects

Based on how worried they are, 16 male and 16 female gymnasts who compete at the national and international levels will be selected for the study.

Using a Sinha W.A. Self Analysis form called the Sinha Anxiety Scale, the degree of anxiety will be assessed. The participants will be split into two groups according to this scale.

Group A:Low Anxiety Individuals Make Up

Group B: High Anxiety Individuals

Selection of Variables

The research was based on the findings of related research and the coordinative abilities literature that was at the time. The following coordinated skills will be chosen while also keeping in mind the specific goal of the study:

1. Orientation ability,
2. Differentiation ability,
3. Balance ability,
4. Rhythm ability,
5. Reaction ability.

Collection of Data

Gymnasts competing at the national and international levels will provide the statistics. Data will be gathered by contacting various gymnastics facilities and dorms, and trainers and coaches will be asked to provide their players instructions on cooperation during data collecting.

Administration of Test

Under the direction of the specialists and the investigators, the test will be given with the assistance of a team of testers and research assistants. The various stations will be set up in a certain order so that the test participants can travel from one testing station to the next one at a time. Following is the order in which the various variables will be tested.

Administration of Coordinative Abilities Test

- The required data will be collected by governing coordinative tests as suggested by Peter Hirtz.
- All the tests will be administrated and explained to the subjects by the tester.

Orientation Ability

Numbered Medicine Ball Run Test

Determine the subjects' orienting skills was the goal.

Equipment's:

1. Five 3 kg weighted medicine balls.

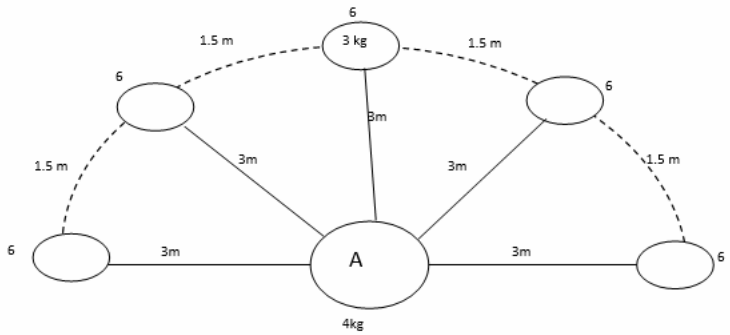
2. A medical ball that weighs 4 kg.
3. Keep time.
4. There are five metal number plates.
5. Clapper
6. Pen, paper, and clipboard

Explanation:

Each of the 3 kilogramme medicine balls will be placed in a semicircle on a level surface. Each of the five 3-kg medicine balls will have a 1-square-foot-sized metabolic number plate behind it before the test begins. The sixth medicine ball, which weighs 4 kg, will be kept 3 metres apart from the other five. The Subject will be instructed to face the opposite direction and stand behind the sixth medicine ball. The test participants were directed to turn and run in the direction of the tester's called and touched ball number.

Scoring:

The length of the course will be indicated in seconds. Each participant will have two trials, and the best one will be used to determine the final score.



Numbered Medicine ball run test orientation ability

Differentiation Ability

Backward Medicine Ball Throw Test

Objective: To find out the differentiation ability of the subjects.

Equipment and Materials:

1. A gymnastic mat (size 3'*6')
2. One 2kg medicine ball
3. Five 1kg medicine ball
4. Pencil, Paper and Pad

Explanation:

A 40 cm-diameter circle will be made in the centre of a gymnastic mat, which will be set up two meters from the throwing line. A 2 kilogramme medicine ball will be placed in the centre of this circle, as indicated on the floor arrangement. The subject will be required to stand two meters away from the throwing line with his back to the gymnastic mat and facing the opposite direction. The subject will next be required to do five overhead throws with both hands, each time launching a 1 kg medicine ball in an effort to hit the 2 kilogram medicine ball that is positioned in the centre of the circle marked on the gymnastic mat.

Instructions:

1. Each individual will receive one practise trial prior to the real testing.
2. When throwing, the subjects are not allowed to glance behind them.

The process for awarding points was as follows:

a. If the medicine ball lands on the gymnastics mat, one point is awarded.

b. A medicine ball scores two points when it hits a circle.

c. Three points are awarded when the painted circle inside it is struck by the medicine ball.

d. Scoring four points by contacting the 2 kg medicine ball in the circle with the medicine ball.

The initial pitch of the ball will be taken into consideration for awarding points. The sum of the points earned over all five tries will be the subject's grade.

Balance Ability

Long Nose Test

Objective: To find out the balance ability of the subjects.

Equipment/time:

1. Balancing Beam
2. One medicine ball weighing 2 kg.
3. One medicine ball weighting 4 kg.
4. Stop watch
5. Pencil, paper and clipboard

Explanation:

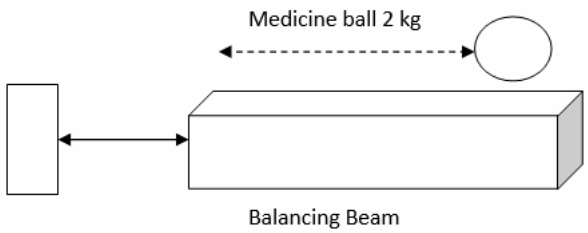
Nearly a metre from the starting line, a standard-sized balance beam will be kept on the ground. The contestants are asked to hold a 1 kg medicine ball with one hand completely extended forward and the other participant's ear lobe in their grasp while standing behind the starting line. After hearing a clap, the participants crossed the balancing beam towards a 2 kg medicine ball that was held at one end of the beam. They then pushed the ball down with only their feet in order to return to the starting position without falling off the beam.

Instruction:

1. The subjects have to keep the arm straight with which the ball is to be carried.
2. The subjects have to roll down the medicine ball which will be kept on the balancing beam with either foot.

Scoring:

Each subject will only be given one opportunity. The grade will be based on how long it took to finish the course. In addition, the subject who is unable to accomplish the assignment without losing their balance will not be given another chance, and no points will be provided.



Rhythm Ability

Sprint at the Given Rhythm Test

Objective: To find out the rhythm ability of the subjects.

Equipment:

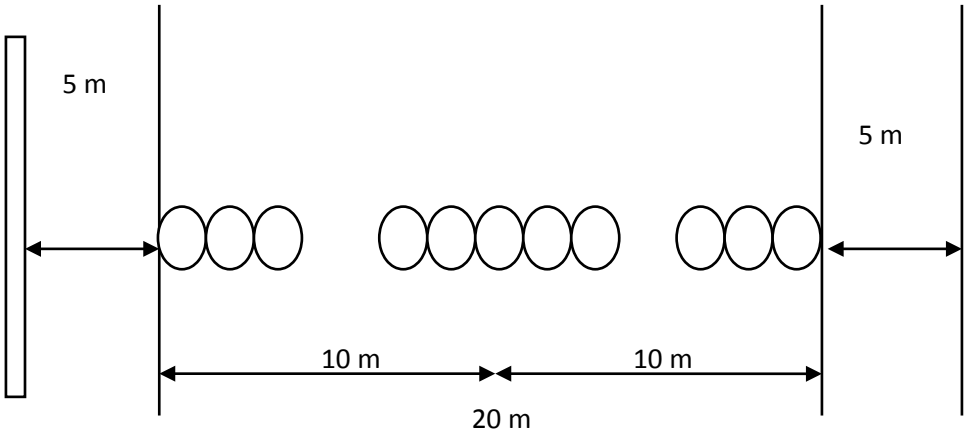
1. Eleven gymnastic hoops
2. On stop watch
3. One Measuring tape.

Explanation:

The participant covered 30 meters while running at a maximum speed indicated between two lines. The stop watch will record the subjects' sprinting times. In the second try, the patient runs through eleven sequentially set hoops while maintaining a specific rhythm and pace. At 5 meters from the starting line, the hoops will continue to be in a row opposite one another. In a same manner, the hoop will maintain a 5 m distance from the finish line. In the midst of the running distance, five more hoops will be retained in a sequence. The subject run through those hoops stepping in between each hoop.

Scoring:

The score will be determined by the timing difference between the first and second attempts.



Rhythm ability

Reaction Ability

Ball Reaction Exercise Test

Objective: To find out the reaction ability of the subjects

Equipments and Materials:

1. Two 4 m long smooth hardwood boards
2. A single inflatable volleyball
3. Whistle
4. Measurement tape
5. Papers, pencil, and pad

Explanation:

As indicated in the figure, a supporting platform with a height of 1.20 m will be used to maintain two wooden planks of 4 m each at an angle to allow the volleyball to freely roll down over the wooden planks that are placed 1.5 m distant from the starting point. One of the wooden planks has a graduated outside edge in centimeters. At the higher end of the planks, the tester will hold the inflatable volleyball. The participants will ask to stand behind the starting line and turn their backs on the planks. After receiving the tester's signal, the subject quickly turned around, ran towards the planks, and stopped the ball with both hands, which the tester would release at the whistle.

Instructions:

1. Before the start of the actual test, each individual will receive one practise trial.

2. The topic forbids glancing back before the signal is given to "go."

Scoring:

The distance from the top of the boards to the spot where the subject stops the ball will be used to calculate the score. Each subject will have three trials, and the average of those three trials will be used to determine the subject's final score. Centimetres will be used to measure the score.

Statistical Technique

The statistical technique employed in this study will be Pearson correlation method.

The level of significance to test the hypothesis will be 0.05.

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